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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/526,566

03/04/2005

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L9289.05111

7427

24257 7590 08/02/2010

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EXAMINER

SHAH, PARAS D

ART UNIT

PAPER NUMBER

2626

MAIL DATE

DELIVERY MODE

08/02/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/526,566	Applicant(s) OSHIKIRI, MASAHIRO	
	Examiner PARAS SHAH	Art Unit 2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3,5-8,11,21-23,30 and 31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 30 and 31 is/are allowed.
- 6) ☒ Claim(s) 3,5-8,11 and 21-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This communication is in response to the Arguments filed on 05/24/2010. Claims 3, 5-8, 11, 21-23, 30 and 31 are pending. The Applicants' amendment and remarks have been carefully considered, but they do not place the claims in condition for allowance. It should be noted that the Applicant's Representative James Ledbetter was contacted on 07/19/2010 to overcome the 35 USC 101 rejections via an Examiner's Amendment; however, no phone call was returned.
2. All previous objections and rejections directed to the Applicant's disclosure and claims not discussed in this Office Action have been withdrawn by the Examiner.

Response to Amendments and Arguments

3. Applicant's arguments (pages 10-12) filed on 04/23/2009 with regard to claims 3, 5-8, 11, 21-23, 30 and 31 have been fully considered and are persuasive. However, a new rejection in view of 35 USC 101 has been applied as shown below. Rejections with respect to claims 30 and 31 have been withdrawn.

Specification

4. The disclosure is objected to because of the following informalities: The Specification lacks priority data to the prior field PCT application for which this application is a National Stage application. Hence, terminology of the following form should be included: "This application claims benefit of the prior filed PCT/JP03/10247,

which was filed on 08/12/2003, which claims priority to the Japanese application 2002-261549, the entirety of which is incorporated by reference..

Appropriate correction is required.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 21 and 22 are rejected under 35 U.S.C. 101 because the claims appear to be directed to a software embodiment and not to hardware embodiment, where a machine claim is directed towards a system, apparatus, or arrangement. The claim appears to be directed towards a software embodiment. Paragraph [0200] software of the Published Specification indicates the invention can be implemented by software. The claimed limitations are capable of being performed as software as described in the above paragraphs, alone since no hardware component is being claimed. Software, alone, are not physical components and thus are not statutory since software do not define any structural and functional interrelationships between the computer programs and other claimed elements of a computer, which permit the computer's program functionality to be realized. Hence, the stated functions comprise software and are thus not directed to a hardware embodiment. Data structures not claimed as embodied in computer readable media are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer. See e.g., Warmerdam, 33 F.3d at 1361, 31, USPQ2d at 1760 (claim to a data structure per se

held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between data and other claimed aspects of the invention, which permit the data structure's functionality to be realized. In contrast, a claimed computer readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory.

Claims 3, 5-8, 11 and 23 are rejected for being dependent upon a rejected base software claim.

Allowable Subject Matter

6. Claims 30 and 31 are allowed.
7. Claims 21 and 22 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 101, set forth in this Office action.

The following is a statement of reasons for the indication of allowable subject matter:

The closest prior art of record Jin (JP 08-263096) teaches a base layer coding section (see [0015], 1st encoder 241) that encodes an input signal per base frame units and obtains a base layer coded code (see [0015]) (e.g. The input into the 1st encoder is the down-sampled signal.); a decoding section that decodes the base layer(see [0015], local decoder 251) and obtains a decoded signal (see [0015]) (e.g. The local decoder decodes the signal from the encoder 241.); an enhancement layer coding section (see

[0015], 2nd encoder 242) that encodes the plurality of residual signals in units of an enhancement frame (see [0015] and [0016]); a multiplexing section (see [0016], multiplexing section 31) that multiplexes the base layer code and the enhancement layer coded code to output a multiplexed code (see [0016], where the multiplexing operation is performed and output as a single code C); a frequency domain transform section that transforms the plurality of residual signals in the frequency domain and obtains a plurality of frequency domain transform coefficients (see [0021], where the discrete cosine transform is performed in the difference signal); quantization domain coding section that encodes information for each base frame (e.g. the frequency domain transform coefficients) and obtains the enhancement layer code (see [0021], quantization section 48, quantizes information for enhancement coder based on acoustic weighting section). However, Jin does not specifically teach the frame division section, frequency domain transform coefficients on a two dimensional plane and the domain divider, and the quantization determining section that determines a part of the plurality of domains to be quantization targets based on power spectrum. Instead, Jin teaches the enhancement layer encodes the difference signal alone. The discrete transform is taken of the residual and quantization based on the acoustic weighting section is performed.

Nomura (JP 10-207496) does teach frame division section that divides a frame shorter than that of the base frame (see [0027]-[0029], frame dividing network 201 divides the input signal into frames and then subframe dividing network divides the frames into subframes.). However, Nomura does not specifically teach frequency

domain transform coefficients on a two dimensional plane, the domain divider, and the quantization determining section that determines a part of the plurality of domains to be quantization targets based on power spectrum.

Najafzadeh-Azghandi ("Perceptual bit allocation for low bit rate coding of narrowband audio") does teach a quantization domain determining section (see page 109, sect. 5.7.3, 1st paragraph, determination as to which bands are above the masking threshold are determined) that determines a part of the plurality of domains to be quantization targets (see page 109, sect. 5.7.3, 1st paragraph, bands above the masking threshold are quantization targets) based on power spectrum values of the frequency domain transform coefficients within each domain and outputs domain information showing the part of the plurality of domains (see page 109, sect. 5.7.3, 1st paragraph, energy of the bands compared to the thresholds and uses the domains for allocating bits, thus output); and a quantization domain coding section that encodes the domain information (see page 109, sect. 5.7.3, 1st paragraph, where the bits are assigned to the critical bands above the masking threshold only, thus only the domains for which the threshold is exceeded) and the frequency domain transform coefficients within the part of the plurality of domains shown by the domain information. However, Najafzadeh-Azghandi does not specifically teach frequency domain transform coefficients on a two dimensional plane and the domain divider dividing the frequency domain transform coefficients into a plurality of domains on the two dimensional plane grouped continuously along a time axis.

Painter ("Perceptual Coding of Digital Audio") does teach the representation of frequency domain transform coefficients on a two dimensional plane (see page 467, sect. III, left column, 1st paragraph time-frequency plane). However, Painter does not specifically teach the domain divider *dividing the frequency domain transform coefficients into a plurality of domains* on the two dimensional plane grouped continuously along a time axis.

The closest prior art of record for the above limitation divides the input signal into subbands. These subbands are then transformed into frequency domain coefficients with respect to time using an MDCT. However, none of the prior arts of records divides *the frequency domain transform coefficients into a plurality of domains on the two dimensional plane grouped continuously along a time axis*. The use of this proposed technique enables fewer bits and a lower bit rate to be realized upon coding of the quantization targets or domains based on the perceptual masking threshold (see Applicant's Specification, page 47, lines 11-14).

None of the cited references either alone or in combination thereof teaches the combination of limitations of "base layer coding section", "decoding section," "subtraction section," "frame division section," "enhancement layer coding section," "multiplexing section", "frequency domain transform section," "domain divider," as "quantization domain determining section," "quantization domain coding section" as recited in claims 21 and 30, and further the decoding claims as recited in claims 22 and 31. Specifically, the limitation of "a domain divider that divides the plurality of frequency domain transform coefficients into a plurality of domains on the two dimensional plane

such that each domain includes at least a plurality of frequency domain transform coefficients which are grouped continuously along a time axis”.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Iwakami et al. (US 6,658,382) is cited to disclose audio coding and decoding and the grouping of frequency domain coefficients into segments and subsequent classification. Mihcak et al. (US 6,973,574) is cited to disclose a MCLT transform and forming of a time-frequency matrix.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PARAS SHAH whose telephone number is (571)270-1650. The examiner can normally be reached on MON.-THURS. 7:30a.m.-4:00p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Wozniak can be reached on (571)272-7632. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2626

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. S./
Examiner, Art Unit 2626

/James S. Wozniak/
Supervisory Patent Examiner, Art Unit 2626

07/29/2010